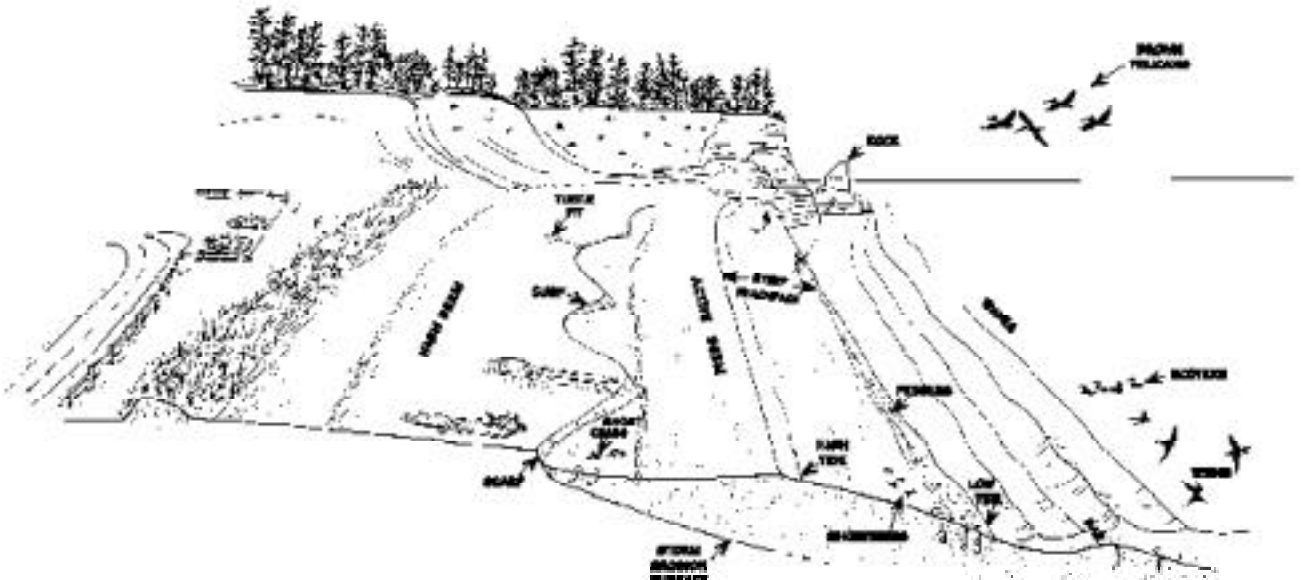

Sand Beaches

Description

- These beaches are flat to moderately sloping and relatively hard-packed.
- There can be heavy accumulations of wrack.
- They are used by birds and turtles.
- Upper beach fauna include ghost crabs and amphipods; lower beach fauna can be moderate, but highly variable.

Predicted Oil Behavior

- Light oil accumulations will be deposited as oily swashes or bands along the upper intertidal zone.
- Heavy oil accumulations will cover the entire beach surface; oil will be lifted off the lower beach with the rising tide.
- Maximum penetration of oil into fine- to medium-grained sand is about 10-15 cm, up to 25 cm in coarse-grained sand. Maximum penetration of oil into fine to medium-grained sand beaches is about 10-15 cm, and about 25 cm into coarse-grained sand beaches.
- Burial of oiled layers by clean sand can be rapid (within one day), and burial to depths as much as one meter is possible if the oil comes ashore at the beginning of a depositional period.
- Organisms living in the beach sediment may be killed by smothering or lethal oil concentrations in the interstitial water.
- Biological impacts include temporary declines in infauna, which can affect important shorebird foraging areas.

Response Considerations

- These beaches are among the easiest shoreline types to clean.
- Cleanup should concentrate on removing oil and oily debris from the upper swash zone once most of the oil has come ashore.
- Manual cleanup, rather than road graders and front-end loaders, is advised to minimize volume of sand removed from the shore and requiring disposal.
- All efforts should focus on preventing vehicular and foot traffic from mixing oil deeper into the sediments.
- Mechanical reworking of lightly oiled sediments from the high-tide line to the upper intertidal zone can be effective along exposed beaches.

INTERTIDAL

Sand Beaches

Oil Category Descriptions

I – Gasoline products
II – Diesel-like products and light crudes
III – Medium grade crudes and intermediate products
IV – Heavy crudes and residual products
V – Non-floating oil products

The following categories are used to compare the relative environmental impact of each response method in the specific environment and habitat for each oil type. The codes in each table mean:

A = The least adverse habitat impact.
B = Some adverse habitat impact.
C = Significant adverse habitat impact.
D = The most adverse habitat impact.
I = Insufficient information - impact or effectiveness of the method could not be evaluated.
— = Not applicable.

Response Method	Oil Category I	II	III	IV	V
Natural Recovery	A	B	B	C	D
Barriers/Berms	B	B	B	B	B
Manual Oil Removal/Cleaning	D	B	A	A	A
Mechanical Oil Removal	D	B	B	B	B
Sorbents	–	B	A	A	B
Vacuum	–	–	B	A	A
Debris Removal	–	A	A	A	A
Sediment Reworking/Tilling	D	B	B	B	B
Vegetation Cutting/Removal	–	C	C	C	C
Flooding (deluge)	A	A	A	B	C
Low-pressure, Ambient Water Flushing	B	B	B	B	C
High-pressure, Ambient Water Flushing	–	–	–	–	–
Low-pressure, Hot Water Flushing	–	–	C	C	C
High-pressure, Hot Water Flushing	–	–	–	–	–
Steam Cleaning	–	–	–	–	–
Sand Blasting	–	–	–	–	–
Solidifiers	–	–	B	–	–
Shoreline Cleaning Agents	–	–	C	C	C
Nutrient Enrichment	–	A	A	B	C
Natural Microbe Seeding	–	I	I	I	I
In-situ Burning	–	–	C	C	C

Consult the *Environmental Considerations for Marine Oil Spill Response* document referenced on page 5 before using this table.